Assuring the safety, security and abundance of our food supply

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V(A). Planned Program (Summary)

1. Name of the Planned Program

Assuring the safety, security and abundance of our food supply

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
502	New and Improved Food Products	18%		18%	18%
503	Quality Maintenance in Storing and Marketing Food Pr	15%		15%	15%
601	Economics of Agricultural Production and Farm Manag	25%		25%	25%
603	Market Economics	14%		14%	14%
712	Protect Food from Contamination by Pathogenic Micro	28%		28%	28%
	Total	100%		100%	100%

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	1.9	0.0	6.8	10.4
Actual	1.9	0.0	6.8	10.4

2. Institution Name: Alabama A&M University

Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	243128
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

2. Institution Name: Auburn University

Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	245076	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	245076	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

2. Institution Name: Tuskegee University

Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	0	204381
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

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V(D). Planned Program (Activity)

1. Brief description of the Activity

The safety of the food supply is a major concern to consumers, distributors, processors, producers, suppliers, and policymakers. All of Alabama&rsquos land-grant universities are striving to meet those demands and to address current and emerging food safety, food quality, nutrition, and health issues, particularly as they relate to consumers, society, industry, and regulatory concerns.

Scientists at Auburn University continue with efforts to rapidly and precisely detect those microorganisms in food that have the potential to cause illness. Scientists at Tuskegee University have continued to focus on research programs that are aimed at developing methods to reduce pesticide usage and to prolong storage of fruits and vegetables. Other researchers are using natural anti-microbial agents to control food borne pathogens. Researchers at Alabama A&M University remain focused on finding solutions to the problem of allergenicity of peanuts and to improving the texture, tenderness, shelf-life, and taste of poultry meat.

The success of the research efforts in this area has resulted in a safer fresh food supply. Outcomes of the metabolic fat control study are relevant to human dietary concerns.

Alabama A&M University scientists evaluated strategies to increase the efficiency of encapsulated butylated hydroxyanisole (BHA) activity in contaminated meats. Extending the shelf-life of ground meat increases the profit margin of producers without increasing the unit price to consumers. Several dyes were tested for their proficiency in differentiating the individual leaves of liposomes and the presence of encapsulated BHA.

At Auburn University, researchers are looking at ways to consistently and accurately monitor Campylobacter species populations in poultry flocks and poultry processing plants.
>Since these bacteria are the most common cause of human gastroenteritis, efficient monitoring can be important for implementation of rapid and appropriate interventions.

Researchers at Auburn University are developing Raman and Fluorescence Biosensing technology for the detection of Foodborne Pathogens such as Salmonella spp. Successful implementation of the developed technology could rapidly and unambiguously detect/identify food-borne bacterial pathogens. The food industry in the state of Alabama has been greatly benefited. A statewide warning system through the rapid detection of bio-pathogens is being established.

Researchers at Tuskegee University continue to focus on biological methods in controlling post-harvest storage pests. The orientation of irradiated fruits and vegetables following low dose ultraviolet light &ndashC treatment induced resistance to decay of selected fruits and vegetables. This reduces the chemical application to prolong shelf-life and reduce post-harvest losses.

Research is continuing on microbial inactivation by combining ultrasonification with chlorine dioxide solution treatment of fruits and vegetables. Such treatment preserves the nutrition and flavor of fresh produce while efficiently reducing bacterial populations. Salmonella species and E. coli are among the bacteria that are inactivated with this treatment, which could be used throughout the food industry to increase food safety and reduce the incidence of product recalls.

Pregnant women are faced with conflicting advice about fish consumption. Omega-3 fatty acids found in fish are needed for optimal neural development of the unborn child; however, fish may also be contaminated with mercury that has adverse effects on the developing fetus. Auburn University researchers are clarifying the degree of risk to pregnant women consuming fish.

2. Brief description of the target audience

Extension specialists, county agents, producers (particularly those that are innovative), processors, food industry personnel, students (both K-12 and at our institutions), all state citizens.

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	**Target**	**Target**	**Target**	**Target**
Plan	700	1100	120	700
2007	700	1100	120	700

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2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	0	40	40

V(F). State Defined Outputs

Output Target
Output #1

Output Measure
? publications

Year	Target	Actual
2007	13	23

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V(G). State Defined Outcomes

O No.	Outcome Name
1	Decreased incidence of cases of food poisoning (AL state stats, % deaths from Salmonella and other intestinal infections in 2004 = 1.6%). Program success will be indicated by a decline or no change in this incidence. (Short-term outcome)
2	New technology(-ies) developed to monitor microbial contaminants. (Medium term outcome)
3	New professionals in workforce with training in food safety and security. (Long-term)

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Outcome #1

1. Outcome

Decreased incidence of cases of food poisoning (AL state stats, % deaths from Salmonella and other intestinal infections in 2004 = 1.6%). Program success will be indicated by a decline or no change in this incidence. (Short-term outcome)

2. Associated Institution Types

- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
502	New and Improved Food Products
603	Market Economics
601	Economics of Agricultural Production and Farm Management
503	Quality Maintenance in Storing and Marketing Food Products
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring To

Outcome #2

1. Outcome

New technology(-ies) developed to monitor microbial contaminants. (Medium term outcome)

2. Associated Institution Types

- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

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What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring To
601	Economics of Agricultural Production and Farm Management
603	Market Economics
502	New and Improved Food Products
503	Quality Maintenance in Storing and Marketing Food Products

Outcome #3

1. Outcome

New professionals in workforce with training in food safety and security. (Long-term)

2. Associated Institution Types

- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	0	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occuring To
601	Economics of Agricultural Production and Farm Management
502	New and Improved Food Products
503	Quality Maintenance in Storing and Marketing Food Products
603	Market Economics

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V(H). Planned Program (External Factors)

External factors which affected outcomes

- ? Natural Disasters (drought,weather extremes,etc.)
- ? Economy
- ? Appropriations changes
- ? Public Policy changes
- ? Government Regulations
- ? Competing Programatic Challenges
- ? Populations changes (immigration,new cultural groupings,etc.)
- ? Other (catastrophic food poisoning)

Brief Explanation

The drought had much impact on fresh vegetable quality.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- ? Retrospective (post program)
- ? During (during program)

Evaluation Results

Satisfactory results were achieved.

Key Items of Evaluation